

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)</b>		Docket Number (Optional)
FY 2005 <i>(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)</i>		2003-0362 / 24061.83
Application Number 10/821156		Filed April 8, 2004
For AUTOMATIC N2 PURGE SYSTEM FOR 300MM FULL AUTOMATION FAB		
Art Unit 2125		Examiner VON BUHR, MARIA N

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	<u>Fee</u>	<u>Small Entity Fee</u>	
<input type="checkbox"/> One month (37 CFR 1.17(a)(1))	\$120	\$60	\$ _____
<input type="checkbox"/> Two months (37 CFR 1.17(a)(2))	\$450	\$225	\$ _____
<input checked="" type="checkbox"/> Three months (37 CFR 1.17(a)(3))	\$1020	\$510	\$ 1,020.00
<input type="checkbox"/> Four months (37 CFR 1.17(a)(4))	\$1590	\$795	\$ _____
<input type="checkbox"/> Five months (37 CFR 1.17(a)(5))	\$2160	\$1080	\$ _____

- Applicant claims small entity status. See 37 CFR 1.27.
- A check in the amount of the fee is enclosed.
- Payment by credit card. Form PTO-2038 is attached.
- The Director has already been authorized to charge fees in this application to a Deposit Account.
- The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 08-1394. I have enclosed a duplicate copy of this sheet.

**WARNING: Information on this form may become public. Credit card information should not be included on this form.  
Provide credit card information and authorization on PTO-2038.**

I am the  applicant/inventor.

- assignee of record of the entire interest. See 37 CFR 3.71.  
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).
- attorney or agent of record. Registration Number 55,272
- attorney or agent under 37 CFR 1.34.  
Registration number if acting under 37 CFR 1.34 \_\_\_\_\_



6/7/06  
Date

Dave R. Hofman

713-547-2523

Typed or printed name

Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

Total of one (1) forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:	§	
Ko-Pin Chang, et al.	§	Group Art Unit: 2125
Serial No.: 10/821,156	§	
Filed: April 8, 2004	§	Examiner: Von Buhr, Maria N.
For: AUTOMATIC N2 PURGE SYSTEM FOR 300MM FULL AUTOMATION FAB	§	Confirmation No.: 9194

Mail Stop Amendment  
Commissioner of Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**AMENDMENT IN RESPONSE TO OFFICE ACTION MAILED DECEMBER 7, 2005**

**I. Introductory Comments**

The present paper is being submitted in response to the Non-Final Office Action mailed December 7, 2005.

A 3-month extension of time fee is believed necessary for consideration of the present paper. The Commissioner is hereby authorized to charge such fee to Haynes and Boone, LLP's Deposit Account No. 08-1394.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Remarks** begin on page 6 of this paper.

**II. Listing of Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A system for manufacturing semiconductor integrated circuit (IC) devices, the system comprising:
  - an operating control system;
  - a plurality of process tools each in communication with the operating control system;
  - a process intermediate station in communication with the operating control system, wherein the process intermediate station is one of a stocker and an overhead buffer (OHB) that is not integral to any of the plurality of process tools; and
  - a gas purge device, wherein the gas purge device is included in the process intermediate station.
2. (Original) The system of claim 1 wherein the operating control system is a material control system (MCS).
3. (Original) The system of claim 1 further comprising a manufacturing execution system (MES) connected to the operating control system.
4. (Original) The system of claim 3 wherein the MES comprises an operation job supervisor (OJS).
5. (Original) The system of claim 3 wherein the MES comprises a dispatcher.
6. (Currently Amended) The system of claim 1 wherein the process intermediate station is the stocker.
7. (Currently Amended) The system of claim 1 wherein the process intermediate station is the OHB.

8. (Previously Presented) The system of claim 1 wherein the process intermediate station is a first process intermediate station that is not integral to any of the plurality of process tools and the system further comprises a second process intermediate station that is not integral to any of the plurality of process tools, wherein the first process intermediate station is the stocker and the second process intermediate station is the OHB.

9. (Previously Presented) The system of claim 1 wherein the process intermediate station is one of at least two process intermediate stations that are each not integral to any of the plurality of process tools, wherein the gas purge device is one of a plurality of gas purge devices, and wherein each of the at least two process intermediate stations is one of a stocker including one of the plurality of gas purge devices and an OHB including one of the plurality of gas purge devices.

10. (Original) The system of claim 1 wherein the gas purge device uses nitrogen as purging gas.

11. (Previously Presented) A system for manufacturing semiconductor IC devices, the system comprising:

- an operating control system;
- a plurality of process tools each in communication with the operating control system;
- a plurality of process intermediate stations each in communication with the operating control system, wherein each of the plurality of process intermediate stations is one of a stocker and an overhead buffer (OHB) that is not integral to any of the plurality of process tools; and
- at least one gas purge device included in at least one of the plurality of process intermediate stations.

12. (Original) The system of claim 11 further comprising a manufacturing execution system (MES) connected to the operating control system.

13. (Original) The system of claim 11 wherein the MES includes a dispatcher.

14. (Original) The system of claim 13 wherein the dispatcher includes dispatching rules for dispatching a workpiece among processing equipment.

15. (Previously Presented) The system of claim 14 wherein dispatching the workpiece includes dispatching the workpiece among the plurality of process intermediate stations.

16. (Previously Presented) A method for automatic nitrogen purge processing in manufacturing semiconductor IC devices, comprising:

transferring, via an operating control system, a workpiece from a first process tool to a process intermediate station, wherein the process intermediate station is one of a stocker and an overhead buffer (OHB) having a gas purge station;

performing gas purging of the workpiece via the gas purge station of the process intermediate station; and

transferring, via the operating control system, the workpiece to a second process tool, wherein the process intermediate station is not integral to either of the first and second process tools.

17. (Previously Presented) The method of claim 16 wherein the operating control system is a manufacturing execution system (MES) configured to control transfer of the workpiece between the process intermediate station and the first and second process tools.

18. (Previously Presented) The method of claim 16 wherein the operating control system includes a material control system (MCS) configured to control transfer of the workpiece between the process intermediate station and the first and second process tools.

19. (Original) The method of claim 16 wherein the workpiece is a lot including a plurality of wafers.

20. (Original) The method of claim 16 wherein the workpiece has at least one wafer included in a front opening unified pod (FOUP).

21. (Previously Presented) The method of claim 16 wherein the process intermediate station is the stocker.

22. (Previously Presented) The method of claim 16 wherein the process intermediate station is the OHB.

23. (Cancelled).

24. (Cancelled).

25. (Previously Presented) The method of claim 16 wherein the gas purge station is one of a plurality of gas purge stations, the method further comprising selecting one of the plurality of gas purge stations to perform the gas purging based on an optimized gas purge queue time, wherein the process intermediate station to which the workpiece is subsequently transferred after the one of the plurality of gas purge stations is selected has the selected one of the plurality of gas purge stations.

26. (Previously Presented) The method of claim 16 further comprising updating a tag ID after gas purging is performed, wherein the tag ID contains process history information associated with the workpiece, and wherein updating the tag ID includes updating the process history information to reflect the performance of the gas purging.

27. (Previously Presented) The method of claim 16 further comprising performing gas re-purging if a shelf time after the gas purging is longer than a pre-determined time.

28. (Previously Presented) The method of claim 16 further comprising raising a flag for hold if the workpiece has no associated process history information available.

29. (Original) The method of claim 16 wherein the gas purging comprises nitrogen purging.

### III. Remarks

Claims 1-29 were originally filed in the present application. Claims 23 and 24 were subsequently canceled without prejudice or disclaimer. In the present paper, no additional claims have been canceled or added. Thus, claims 1-22 and 25-29 are currently pending in the present application.

Reconsideration of this application in light of the above amendments and the following remarks is requested.

#### **Rejections under 35 U.S.C. §103: Hanak**

##### Claim 1

Claims 1, 6, 9, and 10 have been rejected under 35 U.S.C. §103(a) as being unpatentable in view of U.S. Patent No. 4,593,644 to Hanak ("Hanak"). Applicants traverse this rejection on the grounds that Hanak is defective in establishing a *prima facie* case of obviousness with respect to claim 1 and, thus, its dependent claims 6, 9, and 10.

As the PTO recognizes in MPEP §2142:

*... The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the Examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness...*

It is submitted that, in the present case, the Examiner has not factually supported a *prima facie* case of obviousness for the following reasons.

As provided in 35 U.S.C. §103:

*A patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains ....*

Thus, when evaluating claim 1 for determining obviousness, all limitations of claim 1 must be evaluated. However, Hanak fails to teach a system for manufacturing semiconductor IC devices, the system comprising a plurality of process tools each in communication with an operating control system, the system also comprising a process intermediate station in communication with the operating control system, wherein the process intermediate station is one of a stocker and an overhead buffer (OHB) that is not integral to any of the plurality of process tools, among other elements of claim 1.

In contrast, the Examiner alleges that subchamber 44 is analogous to the instantly claimed stocker. However, the subchamber 44 is explicitly integral to the other process tools of Hanak – specifically, the subchamber 44 is integral to the other subchambers 46, 48, 50 and 52, such that a carrier 80 can pass completely through each of the subchambers 44, 46, 48, 50 and 52 in a continuous uninterrupted motion. (Col. 9, lines 50-54). Consequently, the Hanak subchamber 44 is not analogous to the instantly claimed stocker because the subchamber 44 is explicitly integral to the other process tools, whereas claim 1 of the present application explicitly requires the stocker to not be integral to the other process tools.

Therefore, it is impossible for Hanak to render obvious the subject matter of claim 1, as a whole. Consequently, the explicit terms of §103(a) cannot be met by Hanak with respect to claim 1 of the present application.

Thus, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness cannot be met by Hanak with respect to claim 1. Consequently, for this mutually exclusive reason, Applicants respectfully request the Examiner withdraw the §103 rejection of claim 1 based on Hanak.

#### Claim 11

Claim 11 has also been rejected under 35 U.S.C. §103(a) as being unpatentable in view of Hanak. Applicants traverse this rejection on the grounds that Hanak is defective in establishing a *prima facie* case of obviousness with respect to claim 11 for the following reasons.

As in the manner described above, when evaluating claim 11 for determining obviousness, all limitations of claim 11 must be evaluated. However, Hanak fails to teach a system for manufacturing semiconductor IC devices, the system comprising a plurality of process tools each in communication with an operating control system, the system also comprising a plurality of process intermediate stations each in communication with the operating control system, wherein each of the plurality of process intermediate stations is one of a stocker and an overhead buffer (OHB) that is not integral to any of the plurality of process tools, among other elements of claim 11. Therefore, it is impossible for Hanak to render obvious the subject matter of claim 11, as a whole. Consequently, the explicit terms of §103(a) cannot be met by Hanak with respect to claim 11 of the present application.

Thus, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness cannot be met by Hanak with respect to claim 11. Consequently, Applicants respectfully request the Examiner withdraw the §103 rejection of claim 11 based on Hanak.

Claim 16

Claims 16, 19, 21, and 29 have also been rejected under 35 U.S.C. §103(a) as being unpatentable in view of Hanak. Applicants traverse this rejection on the grounds that Hanak is defective in establishing a *prima facie* case of obviousness with respect to claim 16 for the following reasons.

As in the manner described above, when evaluating claim 16 for determining obviousness, all limitations of claim 16 must be evaluated. However, Hanak fails to teach the utilization of an OHB having an integral gas purge station to perform gas purging of a workpiece, wherein the OHB is not integral to either of first and second process tools between which the workpiece is transferred via an operating control system, among other elements of claim 16. Therefore, it is impossible for Hanak to render obvious the subject matter of claim 16, as a whole. Consequently, the explicit terms of §103(a) cannot be met by Hanak with respect to claim 16 of the present application.

Thus, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness cannot be met by Hanak with respect to claim 16. Consequently, Applicants respectfully request the Examiner withdraw the §103 rejection of claim 16 based on Hanak.

Rejections under 35 U.S.C. §103: Hanak in view of Wehrung

Claims 2 and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hanak in view of U.S. Patent Application Publication No. 2002/0164242 of Wehrung ("Wehrung"). Applicants traverse this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 1 and 16 and, thus, their dependent claims 2 and 18. That is, as described above, Hanak fails to teach a system or method for manufacturing semiconductor IC devices, wherein a process intermediate station is in communication with an operating control system, and wherein the process intermediate station is one of a stocker and an overhead buffer (OHB) that is not integral to any of a plurality of process tools also included in the system, among other elements of claims 1 and 16. Moreover, Wehrung fails to cure this shortcoming of Hanak.

Thus, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met by the combination of Hanak and Wehrung. Accordingly, Applicants respectfully request the Examiner withdraw the rejection under 35 U.S.C. §103 based on the combination of Hanak and Wehrung.

Rejections under 35 U.S.C. §103: Hanak in view of Pasadyn

Claims 3-5, 12-15, 17 and 25-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hanak in view of U.S. Patent No. 6,678,570 to Pasadyn ("Pasadyn"). Applicants traverse this

rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claims 1, 11 and 16 and, thus, their dependent claims 3-5, 12-15, 17 and 25-28. That is, as described above, Hanak fails to teach a system or method for manufacturing semiconductor IC devices, wherein a process intermediate station is in communication with an operating control system, and wherein the process intermediate station is one of a stocker and an overhead buffer (OHB) that is not integral to any of a plurality of process tools also included in the system, among other elements of claims 1, 11 and 16. Moreover, Pasadyn fails to cure this shortcoming of Hanak.

Thus, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met by the combination of Hanak and Pasadyn.

Accordingly, Applicants respectfully request the Examiner withdraw the rejection under 35 U.S.C. §103 based on the combination of Hanak and Pasadyn.

**Rejections under 35 U.S.C. §103: Hanak in view of Chen**

Claims 7, 8, 20 and 22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hanak in view of U.S. Patent No. 6,821,644 to Chen ("Chen"). Applicants traverse this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claims 1 and 16 and, thus, their dependent claims 7, 8, 20 and 22. That is, as described above, Hanak fails to teach a system or method for manufacturing semiconductor IC devices, wherein a process intermediate station is in communication with an operating control system, and wherein the process intermediate station is one of a stocker and an overhead buffer (OHB) that is not integral to any of a plurality of process tools also included in the system, among other elements of claims 1 and 16. Moreover, Chen fails to cure this shortcoming of Hanak.

Thus, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met by the combination of Hanak and Chen. Accordingly, Applicants respectfully request the Examiner withdraw the rejection under 35 U.S.C. §103 based on the combination of Hanak and Chen.

**Rejections under 35 U.S.C. §102: Yamashita**

Claims 1, 6, 9-11, 16, 19, 21 and 29 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,746,008 to Yamashita, et al. (“Yamashita”).

**Claim 1**

The PTO provides in MPEP §2131 that: “to anticipate a claim, the reference must teach every element of the claim.” Therefore, to support a rejection of claim 1, Yamashita must contain all of the elements of claim 1.

The Examiner points to the following portions of Yamashita:

- “In Fig. 1, reference numeral 100 designates a film forming deposition system arranged in a clean room; 200, a wafer cleaning device; 300, a purging station; 400, a clean stocker; 500, a transfer robot on which a product placing device is mounted; and 30, a portable closed container.” (Col. 4, lines 1-5).
- “In the above-described purging stations, the container storing section 1C is provided for empty containers; however, it may be used for storing the containers gas-purged; that is, it may be used as a container clean stocker.” (Col. 8, lines 8-14).
- “In the above-described embodiment, the purging station is separate from the cleaning equipment.” (Col. 8, lines 31-33).

However, these portions of Yamashita collectively fail to disclose:

- an operating control system;
- a plurality of process tools each in communication with the operating control system;
- a process intermediate station in communication with the operating control system, wherein the process intermediate station is one of a stocker and an overhead buffer (OHB) that is not integral to any of the plurality of process tools; and
- a gas purge device, wherein the gas purge device is included in the process intermediate station.

For example, Yamashita’s container storing section 1C may be used for storing gas-purged containers (i.e., it may be used as a clean container stocker), but Yamashita fails to disclose that the container storing section 1C may itself include a gas purge device, or may otherwise be employed to perform gas purging. A component employed to store gas-purged items is clearly different from a component employed to perform gas-purging of items.

Yamashita also fails to disclose an operating control system that is in communication with both of:

- a plurality of process tools; and
- a stocker or an overhead buffer (OHB) that is not integral to any of the plurality of process tools but that does include a gas purge device.

For at least these reasons, the §102(b) rejection of claim 1 is not supported by Yamashita. Accordingly, Applicants respectfully request the Examiner withdraw the §102(b) rejection of claim 1 and its dependent claims.

Claim 11

Yamashita also fails to disclose analogous elements recited in claim 11. Consequently, the explicit terms of §102(b) cannot be met by Yamashita with respect to claim 11. Accordingly, Applicants respectfully request the Examiner withdraw the §102(b) rejection of claim 11 and its dependent claims.

Claim 16

Yamashita also fails to disclose analogous elements recited in claim 16. Consequently, the explicit terms of §102(b) cannot be met by Yamashita with respect to claim 16. Accordingly, Applicants respectfully request the Examiner withdraw the §102(b) rejection of claim 16 and its dependent claims.

**Rejections under 35 U.S.C. §103: Yamashita in view of Wehrung**

Claims 2 and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamashita in view of Wehrung. Applicants traverse this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claim 1 and 16 and, thus, their dependent claims 2 and 18. That is, as described above, Yamashita fails to teach each and every element recited in claims 1 and 16. Moreover, Wehrung fails to cure this shortcoming of Yamashita.

Thus, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met by the combination of Yamashita and Wehrung. Accordingly, Applicants respectfully request the Examiner withdraw the rejection under 35 U.S.C. §103 based on the combination of Yamashita and Wehrung.

**Rejections under 35 U.S.C. §103: Yamashita in view of Pasadyn**

Claims 3-5, 12-15, 17 and 25-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamashita in view of Pasadyn. Applicants traverse this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claims 1, 11 and 16 and, thus, their dependent claims 3-5, 12-15, 17 and 25-28. That is, as described above, Yamashita

fails to teach each and every element recited in claims 1, 11 and 16. Moreover, Pasadyn fails to cure this shortcoming of Yamashita.

Thus, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met by the combination of Yamashita and Pasadyn. Accordingly, Applicants respectfully request the Examiner withdraw the rejection under 35 U.S.C. §103 based on the combination of Yamashita and Pasadyn.

**Rejections under 35 U.S.C. §103: Yamashita in view of Chen**

Claims 7, 8, 20 and 22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamashita in view of Chen. Applicants traverse this rejection on the grounds that these references are defective in establishing a *prima facie* case of obviousness with respect to claims 1 and 16 and, thus, their dependent claims 7, 8, 20 and 22. That is, as described above, Yamashita fails to teach each and every element recited in claims 1 and 16. Moreover, Chen fails to cure this shortcoming of Yamashita.

Thus, for this mutually exclusive reason, the Examiner's burden of factually supporting a *prima facie* case of obviousness has clearly not been met by the combination of Yamashita and Chen. Accordingly, Applicants respectfully request the Examiner withdraw the rejection under 35 U.S.C. §103 based on the combination of Yamashita and Chen.

**IV. Conclusion**

It is clear from all of the foregoing that independent claims 1, 11 and 16 are in condition for allowance. Dependent claims 2-10, 12-15, 17-22 and 25-29 depend from and further limit independent claims 1, 11 and 16 and, therefore, are allowable as well.

It is believed that all matters set forth in the Office action have been addressed. Favorable consideration and an early indication of the allowability of the claims are respectfully requested. Should the Examiner deem that an interview with Applicants' undersigned attorney would expedite consideration, the Examiner is invited to call the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

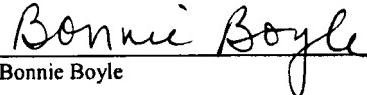
  
Dave R. Hoffman  
Registration No. 55,272

Dated: 6/7/06

HAYNES AND BOONE, LLP  
901 Main Street, Suite 3100  
Dallas, Texas 75202-3789  
Telephone: 972/739-8630  
IP Facsimile No. 214/200-0853

**Certificate of Service**

I hereby certify that this correspondence is being filed with the U.S. Patent and Trademark Office via EFS-Web on June 7, 2006.

  
Bonnie Boyle